

MES COLLEGE OF ENGINEERING, KUTTIPPURAM
DEPARTMENT OF COMPUTER APPLICATIONS
20MCA245 – MINI PROJECT

PRO FORMA FOR THE APPROVAL OF THE THIRD SEMESTER MINI PROJECT

(Note: All entries of the pro forma for approval should be filled up with appropriate and complete information. Incomplete Pro forma of approval in any respect will be rejected.)

Mini Project Proposal No : __1_____
(Filled by the Department)

Academic Year : 2021-2022

Year of Admission : 2020

1. Title of the Project : FACE RCOGNITION ATTENDANCE AND TEACHER PERFORMANCE SYSTEM
2. Name of the Guide : Mr.NOWSHAD CV
3. Number of the Student: MES20MCA-2054
4. Student Details (in BLOCK LETTERS)

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Signature

1.

Date: 1/11/2021

Approval Status : Approved / Not Approved

Signature of
Committee Members }

Comments of The Mini Project Guide

Dated Signature

Initial Submission :

First Review :

Second Review :

Comments of The Project Coordinator

Dated Signature

Initial Submission:

First Review

Second Review

Final Comments :

Dated Signature of

HOD

FACE RECOGNITION ATTENDANCE AND TEACHER PERFORMANCE SYSTEM

SURFA FARSEENA

INTRODUCTION:

A Facial expression is the visible manifestation of the affective state, cognitive activity, intention, personality and psychopathology of a person and plays a communicative role in interpersonal relations. Human facial expressions can be easily classified into 7 basic emotions: happy, sad, surprise, fear, anger, disgust, and neutral. Our facial emotions are expressed through activation of specific sets of facial muscles. These sometimes subtle, yet complex, signals in an expression often contain an abundant amount of information about our state of mind. Expression and emotions also have an important role in analyzing the student's interest in the classroom lectures. Out of the various ways to detect emotion, the quick way is to understand the emotion symptoms through facial expression. It is easy to observe the students and their reaction on a particular topic which is being taught by the instructors during an instructor-led course. One of the key challenges was the un-captured emotion of the learner. Most of the time in this type of environment even an important lecture or course ends up with the boredom of the student. All the effort of the instructor and their instructional aides become ineffective. In order to overcome these issues, more interactive learning technologies have been introduced in the past few decades but was not able to find a better way to analyze the emotions in real-time in an e-learning environment. In this project, by combining the online courses platforms and a compact deep learning model based on the architecture of CNN, we construct website to analyze students' emotions according to their facial expressions from the perspective of computer simulation and teachers can adjust their teaching strategies accordingly to improve the efficiency of online teaching also they get the attendance of each students by face recognition.

Existing system

These days, there are no e-learning systems that provide any ability to focus on emotional aspects in real-time. One of the biggest problems of e-learning systems is to maintain the motivation of the students in the virtual classrooms. This situation is easier in formal classrooms because the educator is in face-to-face contact with the students in the same environment. The facial expressions are useful for efficient interaction. Most research and systems in facial expression recognition are limited to six basic expressions (joy, sad, anger, disgust, fear, surprise). It is found that it is insufficient to describe all facial expressions and these expressions are categorized based on facial actions. Detecting faces and recognizing facial expression is a very complicated task when it is vital to pay attention to primary components like: face configuration, orientation, location where the face is set.

Proposed system

Our system mainly proposes Teacher's performance analysis based on reviews that provided by students. For this we use sentiment analysis it gather insights from unorganized and unstructured text

that comes from online sources such as emails, blog posts, support tickets, web chats, social media channels, forums and comments. Algorithms replace manual data processing by implementing rule-based, automatic or hybrid methods. Rule-based systems perform sentiment analysis based on predefined, lexicon-based rules while automatic systems learn from data with machine learning techniques. A hybrid sentiment analysis combines both approaches.

Our system also contains a face recognition attendance system. A facial recognition system is a technology capable of recognizing or validating a person from a digital image or a continuous image frame from a video source. they work by differentiating selected facial information from given information with faces within a database. It is also termed as Biometric Artificial Intelligence based on use cases that can individually identify a student by figure out patterns based on the student's facial information and shapes. And this facial recognition system is used to implement the attendance system.

Face recognition entirely either in form of actualization based which covers the information of whole frontal face or element based which covers the mathematical feature like eyes, nose, eye brows, and cheeks to perceive the face. Our system accepts face recognition progress to slow down the defect of existing system with the help of deep learning, it has needed a good quality camera to capture the images of students, the detection process is done by Scatter diagram of oriented angle and recognizing perform through deep learning. The frontend side (client) which consist of GUI which is established on electron JS and backend side consist of logic and python (server), an IPC (Inter Personal Communication) bridge is developed to communicate these two loads

By this kind of attendance system, we can minimize the time taken to take the attendance of staff or students can be reduced to None. We don't want to put any effort to get our attendance. The system will understand our face and will mark our attendance in the database in a matter of time when we appear in front of the camera.

Basic functionalities:

USER Modules

The proposed system consists of 3 modules, they are:

1. Admin/HOD module

2. Staff

3. Student

1. Admin/Hod module

Login

Quality of teaching identification

View reviews

View Student's attendance

View the teacher's performance.

View attendance

2. Staff

Login

Quality of teaching identification

View reviews

View student's attendance

View teacher Performance

View attendance

3. Student

Students face recognition

Add review

View attendance

FUNCTIONAL MODULES:

Sentiment analysis

Sentiment analysis, also referred to as opinion mining, is an approach to natural language processing (NLP) that identifies the emotional tone behind a body of text. This is a popular way for organizations to determine and categorize opinions about a product, service, or idea. It involves the use of data mining, machine learning (ML) and artificial intelligence (AI) to mine text for sentiment and subjective information.

Sentiment analysis systems help organizations gather insights from unorganized and unstructured text that comes from online sources such as emails, blog posts, support tickets, web chats, social media channels, forums and comments. Algorithms replace manual data processing by implementing rule-based, automatic or hybrid methods. Rule-based systems perform sentiment analysis based on predefined, lexicon-based rules while automatic systems learn from data with machine learning techniques. A hybrid sentiment analysis combines both approaches.

In addition to identifying sentiment, opinion mining can extract the polarity (or the amount of positivity and negativity), subject and opinion holder within the text. Furthermore, sentiment analysis can be applied to varying scopes such as document, paragraph, sentence and sub-sentence levels.

Facial Recognition System:

A facial recognition system is a technology capable of matching a human face from a digital image or a video frame against a database of faces, typically employed to authenticate users through ID verification services, works by pinpointing and measuring facial features from a

given image.

Development began on similar systems in the 1960s, beginning as a form of computer application. Since their inception, facial recognition systems have seen wider uses in recent times on smartphones and in other forms of technology, such as robotics. Because computerized facial recognition involves the measurement of a human's physiological characteristics, facial recognition systems are categorized as biometrics. Although the accuracy of facial recognition systems as a biometric technology is lower than iris recognition and fingerprint recognition, it is widely adopted due to its contactless process. Facial recognition systems have been deployed in advanced human-computer interaction, video surveillance and automatic indexing of images

HARDWARE AND SOFTWARE REQUIREMENT

Hardware Requirements

It is recommended that for optimal performance, the following minimum hardware are installed on the server on which the portal is hosted, as well as on clients that access the portal.

1. Processor : Intel Pentium IV
2. Monitor : Min. 14
3. RAM : 256 MB
4. Hard Disk : 80 GB
5. Keyboard : Standard 104 Keys
6. Modem : 56 Kbps
7. Mouse : Serial mouse

Software Requirements

For the proposed system to work properly, it is necessary that following software are installed and running on the server / client.

1. Operating System : Windows 8 or higher
2. Front End Tool : HTML, CSS, python
3. Back End Tool : MY SQL
4. IDE : Pycharm community, Android studio/eclipse
5. Web Browser : All new browsers

